

## ABSTRACT

Disclosed herein are systems and methods of hydrocarbon detection based on wavelet energy absorption analysis. One disclosed hydrocarbon detection method embodiment comprises: a) obtaining seismic trace data for a region of interest; and b) processing the seismic trace data to determine at least one wavelet energy absorption factor as a function of position within the region of interest. Another disclosed hydrocarbon detection method embodiment comprises: a) receiving from a user an indication of a region of interest in a seismic data set; and b) generating a display of wavelet energy absorption anomalies within the region of interest. One of the disclosed system embodiments comprises a memory and a processor. In this system embodiment, the memory stores hydrocarbon detection software that, when executed by the processor, configures the processor to determine at least one wavelet energy absorption factor from seismic trace data.